C. UNREGULATED INTERNET TELEPHONY WILL BURDEN THE INTERNET AND THE TELEPHONE INFRASTRUCTURE TO THE DETRIMENT OF PROVISIONING UNIVERSAL SERVICE AND ADVANCED TELECOMMUNICATIONS SERVICES.

Today, the Internet, even without voice telephony traffic, is rapidly becoming more and more congested. The result is increasing instances of "brownouts."[42] The explosive growth of Internet use has resulted in increased latency and, in some cases, failure in the delivery of packets. Such failures are inherent in the very design of the Internet.

The demand on capacity created by the addition of plain old voice services will only magnify the congestion on the Internet and result in greater latency and failures in packet transmission. Indeed, communications experts have predicted an Internet "meltdown" in 1996.[43]

Although the data packet architecture of Internet telecommunications messages is distinguishable from the circuit switch architecture of the traditional telephone system, Internet calls are, nevertheless, transmitted using the traditional telephone network infrastructure. An Internet user who initiates a call through "dial-up" Internet access is, in fact, gaining access to the Internet via his/her LEC's local exchange network. The Internet call is most frequently then transmitted over long distance lines: also part of the traditional telephone network infrastructure. Likewise, the called party gains Internet access through his/her LEC.

Traditional Internet usage is also adding to the strain on the traditional telephone network

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[42] See Exhibit 2; Telecommunications, April 1996, at 8.

[43] See Exhibit 2; Telecommunications, April 1996, at 8; *We Warned You,* Andrew Seybold's Outlook on Communications and Computing, March 25, 1996; *Please hold for the new Technology,"* Special Report, Business Week, April 8, 1996, at 82-84.

infrastructure. Increased volume, combined with new usage behavior, have placed additional demands on the investment in the traditional telephone infrastructure.[44] Telephone companies offering flat rate ISDN service have discovered that Internet users are on line for hours at a time.[45] The new usage pattern created by the Internet is already beginning to affect the traditional telephone users' ability to use the telephone system and will rapidly burden the LECs' cost recovery mechanisms which are based on usage averages.[46] In order to accommodate both traditional telephone service consumers and Internet users, telephone companies will be forced to upgrade switches and trunks in the telephone infrastructure.[47]

Yet, with the advent of server-networks, the willingness and ability to upgrade these networks is seriously compromised. Moreover, Internet telephony is not the only factor involved. In the same article which discusses the advent of server-networks, the author provides a concise discussion of other forces which are weighing on the future economic viability of todays landline exchange networks.

After commenting on the impact on construction budgets that the drop off in access charges portends for the RBOCs and other LECs, the author addresses a new economic theme. This one is focused on the erosion of equipment purchases for landline network upgrades regardless of technological breakthroughs like the server-network. A CFO of a major independent LEC, when interviewed about the financial contributions of its four major operating

---

[44] Internet users, unlike telephone service consumers, tend to stay on line for long periods of time -- far in excess of the industry standard average telephone call.

[45] See Exhibit 2; Business Week, April 8, 1996, p. 83-84.

[46] Dr. Robert Self, Long Distance for Less, 13-3 through 13-6 (1988).

[47] Business Week, April 8, 1996, at 84.

divisions, had the following observations about each divisions' contributions to the company's stock price: the company's cellular division contributed 66%; LEC operations 23%; embryonic PCS operations 8% and paging 3%. However, the LEC operations account for 75% of the Company's assets and most of its cash flow; yet the 23% contribution was described in the article as "miserable." The author drew the following conclusions -

> The CFO's problem is simply put. Going forward, every dollar spent in the land line telco will generate less value than a dollar spent on wireless service. Yes telcos generated the cash flow to launch wireless - but in the future, wireless will grab the business and the telco will erode.[48]

It appears that the future of local exchange plant maintenance and upgrades will have to be measured by the factors having nothing to do with Internet telephony - namely, diminished access charges, dwindling return on fixed investments and potential obsolescent of plants due to technological breakthroughs such as server-networks. This poses additional problems if the development of telephony over the Internet were to be ignored or exempted from consideration in establishing telecommunications policy and redefining the industry's public interest obligations for the future. With the potential that Internet phone usage will drain contributions from the maintenance of the landline investment, soon to be under siege from other directions, it is inescapable that both traditional services, and new services will suffer, as will the public and its reliance on them. And to those who would optimistically predict that the problem will be short lived, if not non-existent, due to the development of server-networks, the Commission is not so free to ignore the history of the industry and the multitudinous failures of "gee-wiz"

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[48] See Exhibit 2; X-CHANGE, March-April 1996. at 31.

technology to produce public benefits quickly or in some cases at all.[49] When either the realization of actual public benefits or the public benefits themselves are illusory or potentially so, but the public detriments are real, palpable and immediate, the Commission cannot turn away in the hope that the problems will find cures or solutions by its non-intervention. Some scientists appear to agree.

There is mounting evidence that the proliferation of unregulated Internet telephony services will compound existing burdens on the telephone infrastructure. One recent example of the present state of affairs included the concerns expressed by a group of high-energy physics researchers at several national laboratories. These scientists complained that the Internet is in a "disastrous state." The researchers maintained that the "'degradation in Internet performance' coincided with last year's privatization of so-called NSFNET, formed in 1986, as the Internet's main backbone."[50] They point out that since the government's withdrawal from Internet management, no coordinated effort has been established to control traffic congestion on the Internet and concluded, "[w]e are in substantial agreement that there is need for a coordinating operation to improve the cooperation among all the private and public networks that are important to the research community."[51]

---

[49] e.g., the X-TEN digital 10 Ghz radio service; DBS; MDS; low power TV; over-the-air pay television; satellite voice and data services; video dial-tone, interactive cable, telephone and TV; and AT&T's 1964 picture-phone.

[50] San Francisco Chronicle, April 12, 1996, p. B1.

[51] Id.

IV. CONCLUSION

For the reasons stated above, ACTA respectfully requests that the Commission propose rules to govern telecommunication services over the Internet.

Respectfully submitted,
America's Carriers Telecommunication Association

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Submitted this 8th day of May, 1996.

EXHIBIT 1

Internet Telephony Service Providers

Companies are listed in alphabetical order for the convenience of the reader.

The following companies offer or propose to offer software, operating system software or on-line services which allow users of the Internet to make telephone calls using the end user's computer.

COMPANY	PRODUCT	DESCRIPTION
Algo Communications Corp.	PhoneKITS	software
America Online	VocalTec	incorporated into service
AT&T WorldNet	in development	software
Camelot	Digiphone	software
Charlie Kline	Maven	software
CyberScience	CyberPhone	software
Electric Magic	NetPhone	software
FreeTel Communications	Free Tel	software (free)
IBM	Direct Talk	software
IDT	Net2Phone	software (PC to phone)
John Walker	Speek Freely	software (free)
Microsoft	in development	add-on to Internet Explorer software
microWonders	Internet Global Phone	software (free)
Netscape	in development	add-on to Web browser software
NetSpeak Corp.	Web Phone	software
PSI Net	Vocal Tec	operating system software
Quarterdeck	Web Talk	software
SilverSoft	Softfone	software
Southwestern Bell	PC Phone Manager	software

Telescape	TS Intercom	software (free)
Third Planet Pub.	Digiphone	software
VocalTec	Internet Phone	software
White Pine Software	CU-See-Me	software (voice/ video)

Subject: AT&T Net Phones
Date: Wed, 1 May 1996 09:04:05 -0700
From: lidas@cnet.com (Lida Soofer)
To: helein@digitalnation.com

>Date: Wed, 1 May 1996 07:46:06 -0700
>X-Sender: brianc@cnet.com
>Mime-Version: 1.0
>To: lidas
>From: Brian Cooley <brianc@cnet.com>
>Subject: AT&T Net Phones
>
>
>**AT&T INTO NET PHONES?**
>
>
> The nation's largest long-distance company intends to swoop into the
>burgeoning competition for delivering telephone
> services across the Internet, a development that would shake up the
>still embryonic industry for providing low-cost talk on
> computer networks.
>
> Such a move by AT&T Corp., which could come by the end of this year,
>would put intense pressure on the handful of
> small software companies, such as Quarterdeck Systems Corp., Third
>Planet Publishing and VocalTec Ltd., that have tried
> to popularize the ability to communicate by voice between personal
>computers. AT&T, which rules about three-fifths of the
> conventional long-distance telephone market, can promote flat-rate Net
>talk to 80 million residential and 10 million business
> customers.
>
> "We intend to take a lead role in it,'' said Tom Evslin, vice president
>of AT&T WorldNet, which develops Internet-related
> services for consumers and companies. Indeed, WorldNet early this year
>announced plans to provide unlimited access to the
> Internet for a flat fee of $19.95 a month.
>
> But Evslin said AT&T does not intend to crush the current crop of Net
>phone competitors. "We don't intend to dominate''
> Internet telephony, he said after a press conference at Internet World
>in San Jose, where AT&T introduced a variety of
> services for companies placing content on the Net's World Wide Web.
>
> Evslin said AT&T specifically elected to take the best "coding and
>compression'' researchers from Bell Laboratories and put
> them into AT&T Laboratories to help develop Internet telephony products
>that would raise the level of sound quality and
> reliability of such services from what is currently offered. Present Net
>phone services are regarded as limited in clarity and
> convenience, compared to conventional phone service. For instance,
>callers can only talk to people that are already
> connected to the Net and can't call acquaintances that are idle.
>Conversations also are 'tinny and not as clear as normal
> phone service.
>
> AT&T Labs, a new research arm of AT&T, is being created in the break-up
>of AT&T Corp. into three pieces. Bell Labs,
> long the flagship research organization of AT&T, became part of Lucent
>Technologies Inc., the company created by the
> spin-off of AT&T Network Systems, the telecommunications equipment business.

> In March, a trade group representing 130 regional long-distance
>companies petitioned the Federal Communications
> Commission in an effort to ban Internet telephony. The long-distance
>carriers said VocalTec and other such software firms
> created unfair competition, since the Internet services they enabled
>were not regulated.
>
> But Evslin said AT&T was opposed to the ACTA petition. "We have no
>absolutely no problem with people creating new
> communication capabilities,'' he said. "We're not a member of ACTA and
>we would have quit if we were.''
>
> Providing flat-rate international telephone service could drain revenue
>from AT&T's bread-and-butter long-distance services,
> where users are billed by the minute. One hour of daytime long-distance
>communication typically costs $12 or more in the
> U.S.
>
> But, Evslin said, "if anybody's going to cannibalize our revenue, it's
>going to be us.''
>
> He said AT&T could actually increase its revenue by such a move, by
>attracting more customers. However, only about
> 500,000 people currently use the Internet for any kind of voice
>communication, using the software products of VocalTec or
> its rivals.
>
> Evslin stopped short, however, of giving any timetable for the rollout
>of AT&T's Internet telephony services and products.
>
> AT&T can be reached at www.att.com
>Director, c|net Radio
>
>c|net, The Computer Network
>150 Chestnut St.
>San Francisco 94111
>
>http://www.cnet.com/Content/Radio
>
>(415) 395 7805, ext. 60[illegible]
>
>c|net radio jams.

WASHINGTON POST, MARCH 8, 1996

"They're giving away our product

—Charles H. Helein, general counsel of America's Carriers Telecommunication Association in McLean, which represents carriers

"In a sense, what these guys are asking is to declare the entire software industry as a telecommunications carrier. I think that's a little far-fetched"

—Elon Ganor, CEO and founder of VocalTec, maker of Internet Phone

Freebie Heebie-Jeebies

New Long-Distance Calling Via the Internet Scares Small Phone Firms

By Mike Mills
Washington Post Staff Writer

The ability to use home computers to place long-distance phone calls over the Internet is still in its infancy, with the first software hitting store shelves only a year ago. But smaller long-distance telephone companies already are sensing a serious threat to their bottom line.

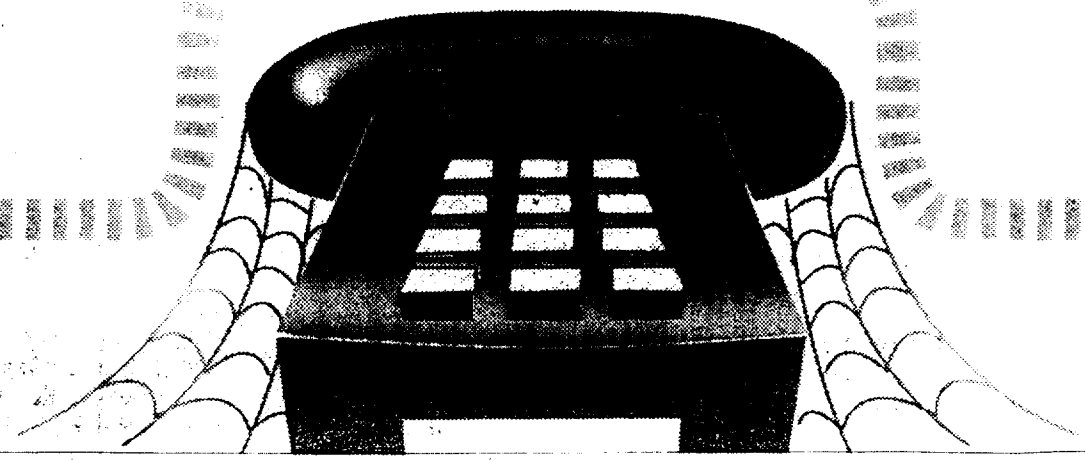
A trade group representing about 130 small long-distance providers this week asked the Federal Communications Commission to stop this kind of communications and study how to regulate it.

"There is something fundamentally wrong, from our members' perspective, that somebody can talk over the Internet for free. They're giving away our product," said Charles H. Helein, general counsel of America's Carriers Telecommunication Association in McLean, which represents carriers with revenues of less than $100 million.

But the software is advancing despite ACTA's fears and protests. The maker of the leading Internet phone software, VocalTec Inc., yesterday unveiled a new product that allows users to place unmetered long-distance calls from one telephone to another—not just one computer to another—anywhere in the world, using computer networks rather than telephone switches.

And the telephone receiving the call need not even use the VocalTec software, though it must be within a

See LONG DISTANCE, F2, Col. 1



DIGEST

day and mild weather, but the

THE REGULATORS

appears to be tapering off ... first time in about eight years.

In 1995, average revenue per room in the U.S. hotel industry grew about 5.9 percent, but revenue per room for economy-priced ... when the ... Quality Inns. Although Manor Care ... cused more on its health care operation, it sought to beef up Choice in the early 1990s, luring the flamboyant ... health care ... for the hotel industry.

The company also broadened be... the food service industry.

'Free' Long-Distance Calls Worry Small Telephone Firms

LONG DISTANCE, From F1

local telephone call of a specially equipped computer file server.

"It's very hard to estimate right now how big the market for this is going to be," said VocalTec Chief Executive Elon Ganor. But "the mathematics here are quite simple. If I need to call my parents in Israel, it's more than a dollar a minute ... [With VocalTec] it's the price of a local phone call. . . . it's quite radical."

Too radical, it seems, for ACTA, a small trade group whose members typically buy long-distance service wholesale from larger carriers and sell it at a discount, largely to businesses. The group wants the FCC to stop makers of Internet telephone software from providing what it calls "unauthorized" telecommunications services. It also wants the agency to write new rules for using phone service this way. FCC officials said they are reviewing the petition.

Most Internet phone systems require both ends of the call to have the same software, as well as personal computers equipped with a modem, headphones and microphone. Because the "call" travels through computer data networks rather than the switched public telephone system, the caller pays no long-distance charges, only the price of a local phone call, in addition to the cost of Internet service.

Voice quality is inferior to telephone service, and often there are delays. But roughly 20,000 people now use Internet phone software regularly, according to International Data Corp., a Framingham, Mass., consulting firm.

For now, the software, which generally costs $50 to $60, is used primarily by hobbyists who enjoy speaking with strangers across the world. But as with VocalTec, software companies are quickly expanding their offerings to a wider market and new uses.

Netscape Communications Corp. has an agreement to bundle Digiphone software, by Texas-based Camelot Corp., with its popular World Wide Web software. Vienna-based America Online Inc. and Herndon-based Internet access provider PSI Net also are beginning to include VocalTec's Internet Phone software as part of their services.

All that growth, ACTA argues, means Internet phone providers are becoming "common carriers" and should be held to the same rules other carriers face. That includes filing applications to do business at the FCC and state regulatory commissions and paying special fees to support universal telephone service to rural and low-income areas.

VocalTec's Ganor said voice communication over the Internet is about to become so widespread—not only for phone calls, but also for interactive games, chat lines and video conferences—that it would be impossible to regulate. "In a sense, what these guys are asking is to declare the entire software industry as a telecommunications carrier," Ganor said.

Long-distance giants AT&T Corp., MCI Communications Corp. and Sprint Corp. are not taking part in the petition—in part because they also provide Internet services.

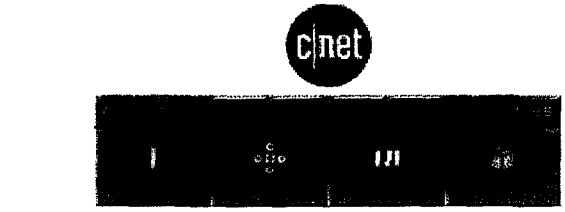
"We don't really have an issue with the software providers," said MCI spokesman Frank Walter. "MCI views the Internet as a very dynamic and robust medium that's in its early stage of development."

AT&T and Sprint had similar reactions. "There's a certain basic equitable problem with using the Internet network to make ordinary voice calls," said Leon Kestenbaum, Sprint's vice president of federal regulatory affairs. "But we don't see it right now as a particular threat."

In fact, AT&T isn't ruling out offering such a product itself as part of its new WorldNet Internet access service. "If it got to the point where customers really wanted it, we'd certainly want to respond to customers' desires," said spokesman Jim McGann.

MCI and Sprint, unlike AT&T, have less to lose because they also carry nearly all of the nation's, and much of the globe's, Internet traffic. Even so, those companies do not price data transmissions on a per-call basis, as they do with voice calls.

For smaller carriers, however, the threat is more immediate, according to Helein: "The carriers with smaller revenues will be sooner impacted by the dislocation and unfairness of this technology than someone like AT&T."



12 Web phones to make Net calls back to intro

Charley Kline's Maven

snapshot

Maven is a lean, free product for those who want to get their feet wet in Net-based voice communication. The sound quality is horrible, but it does come with an impressive array of audio settings

review

Charley Kline's Maven version 2.0a18 is a freebie for those Mac users who want to experiment with Internet-based voice communication. Alas, the sound quality for this product is downright scary. No kidding. Our jury wanted to flee the room to escape the screeching noises, most likely due to feedback, that come hurtling through the speaker after a transmission is made.

As Kline himself says, "I need more time to get a slicker user interface." As it is now, you type in an IP address and talk--no phone book, voice mail, text chatting, or other amenities, although Kline does have plans to include video.

go to screen shot

As with the other free offerings, there's no way to tell if you've actually connected to another party until they start talking back to you. When you talk, you have to hold down the mouse button to transmit.

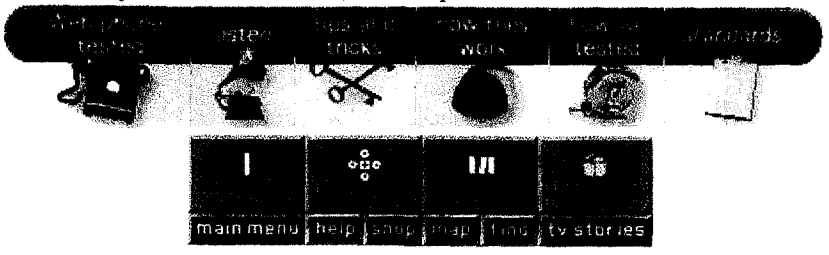
What Kline does include is a full array of audio/video codecs, as well as support for both the RTP and VAT connection protocols that were originally developed for the Unix environment. Unfortunately, the unbearable screeching noise occurred with all four audio codecs we tried. To his credit, Kline warns that Maven is alpha software and that you should use it at your own risk. We advise the same.

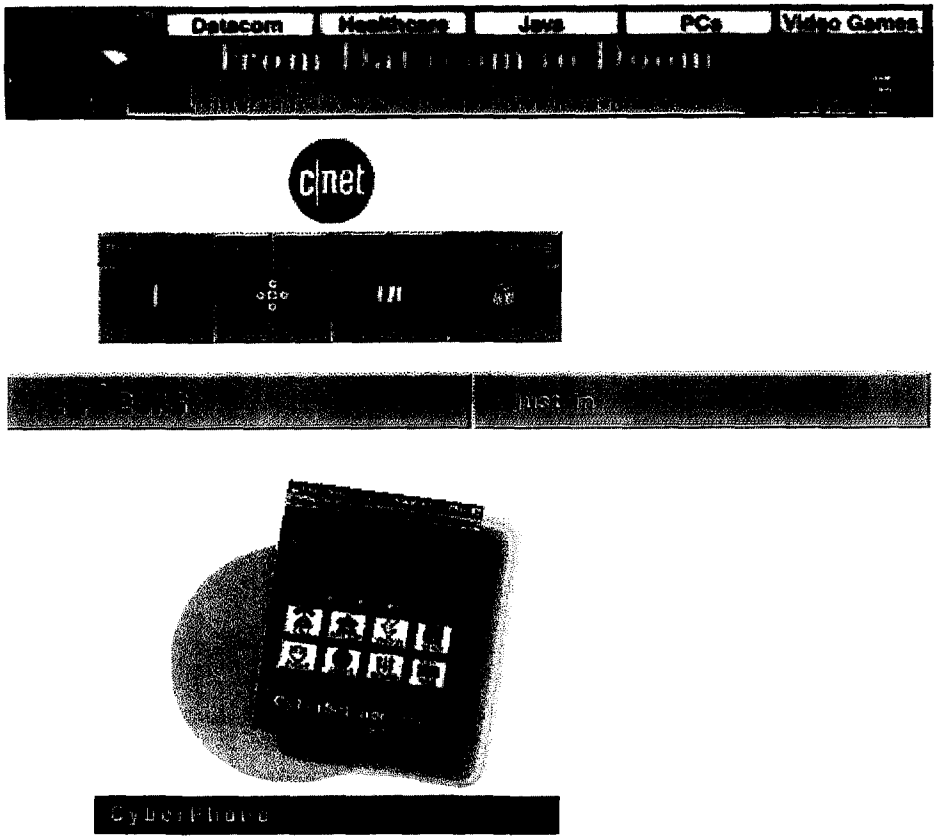
next review

facts

Maven
Price: free
Author: Charley Kline
URL: http://tampico.cso.uiuc.edu/~kline/cvk-ido.html
Available: now

Mac LC, System 7, 4MB RAM, 14.4-kbps modem





rough edges dull luster of CyberPhone beta
by Michael Mathog
(3/6/96)

CyberScience's CyberPhone is one of the latest entrants to an emerging genre of Internet telephony software. Like the others in its class, CyberPhone lets you talk with your friends--without paying phone company charges--simply by using a multimedia computer, a microphone, and the Internet.

Overall, CyberPhone's sound quality is solid with a high-speed Net connection, but the product lacks key features that make it easy to maintain lists of the people you call frequently. That's a real drawback, considering most competing products let you maintain virtual speed-dial directories. See our comparative reviews section for a roundup of 12 similar products and c|net's recommendations.

In general, all the products we tested worked the same way. First, the software digitizes and compresses your voice as you speak into a microphone; then the program transmits the data using proprietary connection protocols. The exchange of sound happens fast, but most of the software we tested exhibited at least some delay.
Determining how well Net telephony will work depends on four factors: the quality of the software, the line speed, the traffic at your service provider, and the traffic over the Internet--roughly in that order of importance.

CyberPhone's beta version has potential. Our tests rated the sound as decent--close to that of a real phone call--over high-speed lines.

But slowing the connection to 14.4 kbps significantly reduced sound quality, rendering the software nearly useless. At these speeds, the connection was plagued by static, dropouts (or lost words), and an underwater sound.

To CyberScience's credit, it is sympathetic to the speed range of user's Internet connections. You can adjust the software for fast and slow connections. But in the late beta version we tested, the thin-pipe option hadn't been implemented effectively. Expect CyberScience to improve this in later versions.

To place a call to someone using CyberPhone, the receiving user must have his or her computer turned on, be logged on to the Internet, and have CyberPhone software running. So unless you and the person you're calling agree to connect at a specfic time, it's unlikely you'll find your friend in CyberPhone's online directory.

To connect, you log on to a server and select a name from a list. Unfortunately, there's no way to save a name, so you need to search for the person you're calling every time you want to talk. You can type in a person's IP and port addresses if you know

them, but you can't save that information, so you must re-enter it every time.

go to Web phones reviews

facts

CyberPhone
Street price: $39.95
CyberScience
PC: Windows 3.1

c|net

snapshot

NetPhone has the distinction of being the only commercial Web phone available for the Macintosh--and it's a pretty good one, too.

review

Electric Magic's NetPhone is currently the only commercial Web phone available for the Mac--and it's a pretty good one, albeit a little lean. As soon as we finished testing, Third Planet Publishing, the maker of Digiphone, announced it was buying the rights to NetPhone; so expect a new version soon. We tested version 1.1.1, which sells for $59 and has nice features for monitoring outgoing and incoming calls. The sound quality in our tests fell a bit short, mostly because the volume stayed low despite our efforts to turn it up on the machine and on the speakers. Nevertheless, our jury found the transmission understandable--although using headphones rather than speakers would be a good idea. Version 1.2.3, available by the time you read this, will offer more features and better sound quality, according to Electric Magic.

NetPhone is full-duplex--that is, it can handle incoming and outgoing transmissions simultaneously--but you must hold down the mouse button to talk. In addition, you must know the IP address of the person you're calling in order to connect for the first time.

go to screen shot

NetPhone offers a wide variety of audio codecs to support various connection speeds. It also supports the VAT connection protocol originally developed for Unix users. Perhaps the clumsiest aspect of the product is that there's no phone book to speak of--you need to save connection information for each party in a separate file.

Although NetPhone is a perfectly usable product, we have trouble getting excited about it. If you can wait until they're released, we recommend that you try the soon-to-be-released Mac versions of WebTalk or Enhanced CU-SeeMe before you buy NetPhone.

next review

facts

NetPhone
List price: $59
Company: Electric Magic
URL: http://www.emagic.com/netphone/mainblurb.html
Available: now

II si, System 7, 4MB RAM, 14.4-kbps modem

half-duplex audio cards to achieve full-duplex.

- **Electronic Phone Directory**: A searcheable directory of users currently on-line is automatically maintained. You can initiate a *FreeTel* phone call simply by mouse-clicking on a person's name, or by typing in the first few characters of his name. There is **no** need to connect to awkward IRC servers. There is **no** need to provide cryptic IP addresses, email addresses, or difficult-to-find POP3 or SMTP server names or passwords. The Electronic Phone Directory is seamless and automatic.
- **Advanced Caller ID:** Not only is the calling party identified by name, but a one-line introduction message about what they want to talk to you about is also displayed. You can use this introduction message to decide whether or not you wish to answer the call.
- **Superior Audio Quality**: With each call, *FreeTel* automatically negotiates the best possible audio quality and adjusts the compression based on the modem speeds (14,400 or 28,800) and CPU speeds of the computers involved. Pentium computers, for example, provide better audio quality than 486 machines.
- **Booster (tm)**: During peak hours, the Internet or your ISP can become overloaded or congested, resulting in lost packets and "choppy" sound quality. Our exclusive *Booster* feature alleviates this problem and improves sound quality, at the expense of increased delay. You can enable or disable the *Booster* during a conversation as conditions warrant.
- **File Transfer**: You can transmit a file to the other party during the course of a conversation. The file transfer process will take place in the background and will not interfere with the conversation.
- **Multiple User Configurations**: If several people in your household use *FreeTel*, each of them can have their own private configuration (including Caller ID information).
- **Phone Web Links**: If you are using Netscape, you can also initiate a *FreeTel* phone call by clicking on a Web Link. If a business has such a link in their Web page, you can call them by clicking on their link.
- **Keyboard Communicator**: Sometimes, it is easier to communicate something via keyboard rather than speech.
- **Caller Log**: Keep track of who called you or who you called.

System Requirements:

The following equipment is required to use *FreeTel*

- **Windows 3.1 or Windows 95** or Windows for Workgroups. (A Windows NT version will be available soon).
- **486/33 or faster computer**. Improved sound quality will be achieved with a Pentium. At least 4 MB of RAM is recommended; more if you are using Windows 95 or running Netscape at the same time. Approximately 1 MB of hard disk space is required.
- **14,400 Internet connection**: A dial-up PPP or SLIP Internet connection is all you need. A 28,800 connection will provide improved sound quality. *FreeTel* will even work with a Unix host account using TIA (The Internet Adapter) or SLIRP to simulate PPP or SLIP.
- **Windows-compatible Sound Card**: Full-duplex will be achieved with Sound Blaster 16, Sound Blaster 32, or other full-duplex audio cards. Half-duplex operation will be achieved with all others. You can also obtain full-duplex by installing two half-duplex audio cards in your machine.
- **Microphone and Speakers** or an integrated headset.

What's the Catch? How can we give away a high-quality product for free?

The answer is simple. Our development and your use of *FreeTel* is supported through sponsorship. As you are using *FreeTel*, small graphical advertisements will appear on your screen. These advertisements are **non-intrusive**: Unlike TV or Radio commercials, **they will not interfere with your conversations or your use of the product in any way**. You can completely ignore them. However, if you find that one

Talk over the Internet for Free! ™

FreeTel enables you to conduct real-time full-duplex voice conversations via the Internet. You can talk to friends and relatives around the world, free of long-distance charges. *FreeTel* includes **full-duplex** (including **Sound Blaster 16**) audio support, an Electronic Phone Directory, Advanced Caller ID Superior Audio Quality, and a keyboard (text) communicator.

Best of all, you can **download** this **high-quality, fully-functional, unlimited use** product for **free**. There is no need to send any money. All you need is a 486/33 or faster computer running Windows 3.x or Windows 95 and a sound card .

Download | Download | Download | Download | Download

Version: **0.94 beta**

Download file size is **262,406** bytes. Approximately 1 MB of hard disk space is required. During the installation process, you will be asked to agree to our **license agreement**. Use of the software is subject this agreement.

For download and installation instructions, click **here.**

So, tell me more...

With revolutionary new technology, it is now possible to use the Internet as a means of carrying real-time voice conversations. The primary advantage is that in using the Internet, you do not incurr any long-distance telephone charges. Your expenses are limited to what you are already paying for your Internet connection. Another advantage is the ability to transmit data while you talk. There are disadvantages, however: The Internet introduces a delay (typically a half to one second) into your conversations, similar to the delay that was typically present in the early days of cross-Atlantic satellite telephone service. Also, there is no connectivity with the existing telephone system, so you can only speak to people who are on the Internet.

Since both the advantages and disadvantages are significant, we leave it to you to decide whether the advantages outweigh the disadvantages.

FreeTel is a software product that makes the best use of your Internect connection and computer system to enable you to talk over the Internet. In some ways, it is similar to a telephone: you can dial somebody up, let *FreeTel* ring, and they answer the call and start talking. In other ways, it is different: you can address people by their real names, search through an Electronic Directory, and even send text messages.

We make it easy for you to learn about this new revolution in communications by providing our product to you for free. Unlike competing Internet Telephone products, our free version is fully-functional with no time restrictions. As long as you are a non-commercial user, there is **no** need to send any money, or wait for some mysterious registration code. Commercial entities are limited to a 30-day free-trial period. Take a look at some of the special features that we offer:

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of them is of interest, you can click on the ad and visit the sponsor's home page. You can even call the sponsor if he has chosen to receive *FreeTel* calls.

We appreciate that some users would prefer not to see such advertisements. We will shortly be providing an improved version of *FreeTel* in which the advertising can be disabled. This version, however, will not be free, as software developments costs are by no means free. If you would be interested in placing an advance order for this product, please send your name, phone number, and e-mail address to ftsales@freetelco.com

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EXHIBIT 2

Articles appear in the order in which they are cited in ACTA's comments.

Way Wrong Number

Hell hath no fury like a city councilman porned

By JOSHUA QUITTNER

THIS IS A TALE ABOUT HOW AN ONLINE prank grows into an international incident. It also goes a long way toward explaining the fear many non-Internet people have about this out-of-control thing called cyberspace.

Our story begins on the banks of Lake Erie, in Willowick, Ohio (pop. 15,469). It is the last Monday night in January, about 9 o'clock. City councilman Frank Suponcic is home with his wife Linda when the phone rings. Linda answers. "Hi, this is Mike," says the man at the other end, politely enough. Linda chats with Mike, figuring he must be a constituent. (As Willowick's longest-serving ward councilman, Suponcic has lots of voters calling him at home.) After a while, Mike asks for Annette. Linda tells him he has the wrong number. Mike apologizes and hangs up.

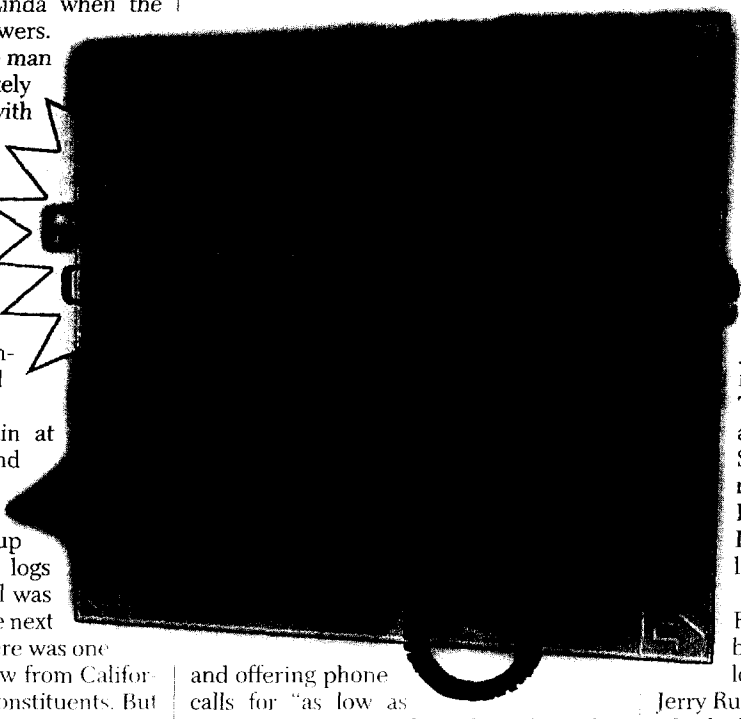
The phone rings again at 11:30 p.m. And again. And again. Wrong numbers until 4:30 a.m. A weary Suponcic wonders what's up and checks the Caller-ID logs on his phone. The first call was from British Columbia. The next was from Connecticut. There was one from Indianapolis and a few from California. Clearly these are not constituents. But who are they?

Suponcic calls the Canadian back—it is now 5:30 a.m. in that time zone, and he is only too happy to wake the dude up—and he demands to know what is going on. The guy explains, vaguely, that he was merely answering an "ad on the Internet. You know, the one about horny housewives ..."

So now we have a problem. Suponcic, like a lot of people, has a new computer. But like most people, he hardly knows what the Internet is. Now, somewhere there's an ad on it. For horny housewives. With his home phone number.

That night, when the next wrong number came in, Suponcic interrogated the caller and learned that the councilman's phone number was printed at the bottom of some pictures of naked women that had been posted to a Usenet newsgroup called *alt.binaries.pictures.erotica*, which, naturally, Suponcic had never heard of. But he had a friend in Cleveland who was something of a computer buff. So the next day the two of them jacked into Usenet and spent three hours sifting through about 7,400 files on *alt. binaries.etc*.

Eventually, they found two with Suponcic's phone number. One featured a topless brunet wearing only a string of pearls and offering phone calls for "as low as 87¢ per minute." The other showed a blond woman advertising "hot amateur wives ready for you from there [sic] own bed." Yikes.



Over the next week, Suponcic received more than 75 calls a day from lusty Netizens. "You just could not make phone calls," says the exasperated councilman. "And when you went to bed, you had to take your phone off the hook."

It was the sorcerer's apprentice scenario, and there was no way to stop it.

Suponcic, being a public official, knew his way around the local police department, and soon a detective started pounding the Net. By tracing the header information on the Usenet postings, the detective determined—O.K., this part is murky, we admit—that the messages had originated in Ohio, passed through Florida Online, an Internet provider in the Sunshine State, and then through *anon.penet.fi*, a free E-mail remailer service based in Finland that allows Internet users to post messages anonymously.

The identity of the poster was, and is, unknown, though Suponcic has his suspicions. "It's my personal belief that the root of this is political," says the councilman, who had to get an unlisted telephone number and whose wife now wants to move.

On Feb. 6, at Suponcic's urging, the Willowick city council passed a resolution asking the state and federal governments to close the "loopholes" that allowed anonymous remailers to operate outside the authority of U.S. law-enforcement officials. "Once you've achieved one of these anonymous identities, you're dangerous, and there's no way law enforcement can track it," Suponcic says. "The animal's out of control."

Still not content, Suponcic contacted Steven LaTourette, the U.S. Congressman who represents his district. LaTourette's staff suspects that the problem lies with Julf Helsingius, the Finn who runs the anonymous remailer. They wrote a letter to the Finnish ambassador and sent copies to the Secretary of State and the chairman of the House Committee on International Relations. The State Department agreed last week to look into the complaint.

But here's a reality check. The Finnish remailer could not have been used, since *anon.penet.fi* no longer transmits binary image files. Jerry Russell, who runs Florida Online and who looked into the case, says he figures the whole thing was a relatively simple prank called a sendmail spoof, in which the prankster posts a message with a phony return address. He says the Willowick police never produced a copy of the posting for him so that he could unravel the tangle for them. Indeed, when the policeman called, "he didn't really understand what he was trying to tell me," says Russell. "The average Joe Blow police detective doesn't know flip about the Internet."

Neither does the average public official. And that, friends, is why stuff like the Communications Decency Act—the Christian Coalition's attempt to remove pornography from the Internet—sails through Congress. —*With reporting by Noah Robischon/New York*

EDEL RODRIGUEZ FOR TIME, PHONE: NICK KOUDIS—THE STOCK MARKET

Internet Meltdown: Could it Happen?

In this month's cover story, we look at a number of issues that relate to the Internet's scalability and sustainability as a complex engineered system. We think this is a timely issue and one that's likely to be much discussed this year and in the years ahead as the Internet continues its phenomenal growth path. What especially prompted our decision to explore this now was the buzz both in the Internet community and among industry experts who are starting to ask some tough questions about Internet performance.

Although this may seem to be a new issue, technical discussions about the ability of the Internet to scale have been ongoing for some time, especially in terms of the projected IP address shortage. But with the runaway popularity of the Internet and the World Wide Web has come a different set of concerns. Among them, user dissatisfaction and an ever-increasing round of complaints as the more popular Web sites, such as Netscape, continue to be maxed out during peak usage hours.

Problems in accessing Web sites are just one part of the story. A number of factors are conspiring to intensify Internet congestion in other critical areas of the Net. As more bandwidth-intensive traffic finds its way onto the Internet, the number of Web sites continue to mushroom, new waves of users flood the system (including defectors from the mainstream on-line service providers such as AOL and Prodigy), the probability of large- and small-scale congestion events rapidly increases. Needless to say, corporate network managers need to understand the ramifications of all this and how they can keep their mission-critical traffic from being affected.

As might be expected, opinions differ widely on just how serious the problem really is. At a recent IDC technology briefing, Ethernet inventor and 3Com founder Bob Metcalfe predicted that the Internet would "collapse" in 1996. When I spoke with Metcalfe to zero in on exactly what he meant by "collapse," he suggested that we would see a series of several "prolonged outages" involving major portions of the network and multiple ISPs.

Metcalfe sees congestion problems occurring in three major areas: the backbone, local access "on ramps," and at Web server sites. But in our discussion he emphasized that it's the backbone that's of most concern because of the lack of intercarrier agreement on settlements. Without such agreements in place, backbone growth and capacity cannot take place as a well-orchestrated and orderly process.

Many in the Internet community think that the notion of large-scale Internet disaster is simply not possible. One ISP insider I spoke with, UUNET's Alan Taffel, called Metcalfe's prediction "absurd" and emphasized that backbone provisioning and capacity planning by the major ISPs is a carefully designed process. Taffel concedes, however, that some of the smaller ISPs are indeed "underengineered" and could become trouble spots. In terms of Web server sites, his opinion is that it's not server capacity that's the show stopper but bandwidth, citing that many sites are using 56 kbps lines when they should be upgrading to T1.

The IETF will have to sort through these issues as it ponders the Internet's continuing growth. Collapse or not, NAP congestion is indeed a problem and, in many instances, packet losses are occurring at unacceptable levels. Beyond this, there is the question of prospects for the Internet's long-term growth. What kind of performance problems might surface, for example, when it reaches user levels of 100-200 million? And, as George Lawton points out in this month's cover story, what effect will new traffic types like video and audio have on this scenario?

For a long time, the Internet community has viewed the telecommunications infrastructure as an invisible support mechanism and more or less taken it for granted. But in the global information age we're all a part of, it's that infrastructure — the real basis of the GII — that makes the interconnected world go round. If Metcalfe's predictions are accurate, the Internet community may finally begin to develop a new appreciation for the *sine qua non* of Internet connectivity: bandwidth. Eventually, these problems will get solved, but Internet planners may have to expand their horizons a bit and adopt some new ways of looking at the complex interdependencies that make up our rapidly evolving telecommunications infrastructure. Stay tuned.

— Tom Valovic, *Editor-in-Chief*, telecomm@world.std.com

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We Warned You!

by Andrew M. Seybold

On several occasions over the course of the last six months, we have raised a red flag about the use of the Internet for voice long-distance services. We pointed out that long-distance carriers are public utilities, regulated and protected by the Federal Communications Commission (FCC) and state Public Utilities Commissions (PUCs). Now the America's Carriers Telecommunications Association (ACTA) has petitioned the FCC to stop companies from selling software and hardware products that enable use of the Internet for voice long-distance services.

ACTA submits that it is incumbent upon the FCC to exercise jurisdiction over the use of the Internet for unregulated interstate and international telecommunications services. Long-distance and international carriers must be approved by the FCC to operate and must file tariffs before both the FCC and state PUCs. All of these requirements are stipulated in the Communications Act of 1934 and the Telecommunications Act of 1996.

ACTA continues, "Technology may once again be surpassing government's ability to control its proper use. However, the misuse of the Internet as a way to 'by-pass' the traditional means of obtaining long distance service could result in a significant reduction of the Internet's ability to transport its ever enlarging amount of data traffic. Therefore, ACTA has petitioned the FCC to define the type of permissible communications which may be effected over the Internet."

The FCC has reacted quickly to this petition and has set a date of April 8, 1996, for comments. Reply comments are due fifteen days later. After reviewing the comments, the FCC will either terminate the proceeding without action or issue a Notice of Proposed Rule Making seeking further comments on a proposed rule.

The Internet

The folks who spend their lives on the Internet are beginning to rise up in arms against this petition and will probably go berserk when the Regional Bell Operating Companies (RBOCs) ask for a "modem tax," as it is being called, to provide some form of revenue from those who use local calls to access the 'Net.

We believe in a person's rights, but we also believe that there is no such thing as a free lunch. It appears to us that those who are most opposed to paying their own way are the same people who believe that the Internet, all software, and anything else they want and need should be made available to them without restrictions and free of charge. Well, if these users don't have to pay, who is supposed to cover all of the associated expenses of supplying such products and services?

What If

First, one might argue that "bits is bits." Whether they are data or voice, bits is bits. And since no one has ever been concerned about bits being sent over the Internet before, why should they be concerned now?

The answer, although obvious, will be restated just so we are all starting from a common point. First, the 'Net has never been used for commercial

purposes before, and its non-commercial use has been subsidized by governments and educational institutions for the purpose of providing a conduit for scientific and educational material within these communities. Once the commercialization of the 'Net began, it mushroomed. New sets of guidelines must be established, and those who are accustomed to the traditional 'Net need to consider the implications of adding commercial users.

Companies that have invested millions of dollars in infrastructure have a right, as far as I am concerned, to realize a profit from the use of their facilities. If everyone gets to use their infrastructure for free, there is no motivation to continue to provide the services. Before firing off flame mail in our direction, please at least read the rest of this column and try to see this situation from the other side of the coin. We are willing to discuss any of these issues, and if we can be convinced that our logic is faulty, we will review our stand and modify it. We ask that you be willing to do the same.

What if the Internet becomes a huge success for bypassing the phone company and conducting voice business over long distances? First, the Internet will become even more overcrowded than it is today and more frequent and more serious brown-outs will become commonplace. We expect you to argue at this point that companies will increase the capacity of the 'Net by adding more and higher-capacity lines such as fiber optic links, ATM, and Frame Relay connections.

Who are the "they" who have the ability to supply such increased capacity? Why, the phone companies, of course. But if the phone companies increase the capacity, what are the resultant wider information highways going to be used for? To circumvent the phone companies! Do you really think that the same people who are losing revenue because of the 'Net will increase the capacity of the 'Net so they can lose even more money?

If you want to get out on the street and string fiber, install high-speed switches, connect to every house and business in the world, and give away your services that run over these systems, that is your right. But you cannot expect to use networks and services provided by others for free and have them at your beck and call at the same time. Someone, somewhere, has to pay the bill. We are willing to bet that those who are the most vocal about the "rights" of users on the Internet are the first ones to call the phone company and complain when their dial tone disappears for a few hours due to a storm or other problem.

For Free?

Before looking further into the voice-over-the-Internet issue, let's digress and look at the other issue that is about to rear its ugly head—local phone access. All of the major Internet providers, and even the public service providers, have local access numbers in most areas of the United States. Your call to the Internet provider is free. It costs you nothing—zip.

Oh, I see, you think that your monthly minimum fee covers the costs of local access, right? Maybe it *did*, but now we have software that is linked to a screen saver and every time your screen saver comes up, it dials in and checks the 'Net looking for specific information you have requested. How many of "you" do you think it is going to take to knock out phone company switches in major urban areas and render them useless—even for 9-1-1 calls, meaning that lives could be at stake.

Oh, we are being overly dramatic. Are we? Basic phone rates are based on average usages—the 'Net and its millions of users are changing the rules and the averages. For any of you who don't already know, the only leg of a phone call where a single call is directed to a dedicated pair of wires is from your local central exchange to your office or house. Sometimes only the last mile or so is allocated a single pair of wires for your specific phone number. On all of the other legs of a call's route, it is directed, combined, multiplexed, and routed to other central offices over "trunked" or "shared" networks.

This means that there is a finite ability to handle calls at each central office. Between central offices, there is sufficient capacity to handle average loads. Do you remember what it is like to try to call your mother on Mother's Day? During times of high usage, the phone system is stressed to its limits. If it cannot handle the load, it does the best it can, but someone gets the short end of the stick. We suspect that as this begins to happen more often, those who are "hogging" the local exchange capabilities will be the first to scream, as well as the loudest.

Again, we are in a quandary. Why should local phone companies increase capacity (read "spend money") when such capacity will continue to be used up by folks connecting to the 'Net and staying connected all day?

Even AT&T has not sufficiently thought this through. Do you use AT&T long-distance service? Good, then you get five free hours of 'Net access each month via a local number, and for $19.95 per month, you get *unlimited* access. What is to prevent you from staying connected all of the time? Just stay dialed up and on the 'Net all of the time and you can have real-time Internet e-mail, real-time chats, or whatever, for only $19.95 per month. And Sprint just announced a similar plan for even less per month. We can't wait to see what happens next.

Now for the double whammy: What happens when AT&T long-distance customers cannot get through the local phone company switch to be connected to AT&T? How much revenue could AT&T lose? How much revenue will the local phone companies lose? Okay, so you don't care. You cruise the 'Net. You let others worry about such things. As long as you get what *you* want, who cares what happens to other folks? Besides, get real, there is "unlimited" bandwidth available from the phone companies and on the 'Net. (*Not!*)

The Bottom Line

The phone system is as good as it is because when the phone companies built it out they had no competition and, therefore, they did it right. Yes, you read that correctly. Even though they were guaranteed that every customer who needed phone service would use *their* service, they still built it out right. They used hardened sites, redundant paths, and a constant maintenance program to keep things working. Even after AT&T had to spin off the RBOCs, the system upgrades kept right on coming.

Now that there is intense competition on the horizon and the phone company is going to have to compete with others to provide your dial tone, do you think that their first concern will continue to be to give you the most reliable service they can? Or are they going to start cutting corners in order to be able to survive in the face of new competition?